Mathematics 7 delivers instruction, practice, and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. Throughout the course, students gain a deep understanding of proportions and their use in solving problems. They extend their fluency with operations on rational numbers and translate among different forms of rational numbers. Algebra topics include simplifying and rewriting algebraic expressions and solving more complex equations and inequalities. Students also sketch geometric figures and explore scale drawings, investigate circle properties and angle relationships, and deepen their understanding of area, volume, and surface area. They see how statistics uses sample data to make predictions about populations and compare data from different data sets. Students gain a fundamental understanding of probability and explore different ways to find or estimate probabilities.

The two-semester course is arranged in themed units, each with three to five lessons. Each lesson includes a variety of activities such as direct instruction, application of skills, performance tasks, and formative and summative assessments. Students engage with the subject matter in an interactive, feedback-rich environment as they progress through standards-aligned content and demonstrate their learning through computer- and teacher-scored assignments. By constantly honing the ability to apply their knowledge in abstract and real-world scenarios, students build the depth of knowledge and higher-order skills required to demonstrate their mastery when put to the test.

This course is built to state standards.

Length: Two Semesters

Unit 1: Operations on Rational Numbers

- Fractions
- Solving Problems with Fractions
- Expressing Rational Numbers in Decimal Form
- Using Operations on Rational Numbers to Solve Problems
- Wrap-Up: Operations on Rational Numbers

Unit 2: Rate, Ratio, and Proportion

- Unit Rates
- Identifying Proportional Relationships
- Analyzing Proportional Relationships
- Representing Proportional Relationships
- Using Proportions to Solve Problems
- Wrap-Up: Rate, Ratio, and Proportion

Unit 3: Addition and Subtraction of Rational Numbers

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- Adding Rational Numbers
- Subtracting Rational Numbers
- Using Properties to Add and Subtract Rational Numbers
- Wrap-Up: Addition and Subtraction of Rational Numbers

Unit 4: Multiplication and Division of Rational Numbers

- Multiplying Rational Numbers
- Dividing Rational Numbers
- Using Properties to Multiply and Divide Rational Numbers
- Wrap-Up: Multiplication and Division of Rational Numbers

Unit 5: Expressions

- Writing Expressions
- Simplifying and Rewriting Algebraic Expressions
- Solving Multistep Problems with Rational Numbers
- Wrap-Up: Expressions

Unit 6: Semester Wrap-Up

- Semester Wrap-Up

Unit 7: Equations and Inequalities

- Solving Two-Step Equations
- Using Equations to Solve Problems
- Solving Linear Inequalities
- Wrap-Up: Equations and Inequalities

Unit 8: Geometric Figures

- Scale Drawings
- Geometric Drawings
- Cross-Sections of Geometric Solids
- Wrap-Up: Geometric Figures

Unit 9: Geometry in Two and Three Dimensions

- Circles
- Angle Relationships
- Area
- Volume and Surface Area
- Wrap-Up: Geometry in Two and Three Dimensions

Unit 10: Statistics and Sampling

- Populations and Samples
- Comparing Data Sets
- Using Statistical Measures to Compare Data Sets
- Wrap-Up: Statistics and Sampling

Unit 11: Probability

- Probability

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- Calculating Probability
- Probability of Compound Events
- Simulations
- Wrap-Up: Probability

Unit 12: Semester 2 Exam

- Semester Wrap Up

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